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09/825,952	04/05/2001	Shinzo Ohkubo	205525US-2	5592

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ALEXANDRIA, VA 22314

EXAMINER

DEAN, RAYMOND S

ART UNIT	PAPER NUMBER
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2684

12

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/825,952

Applicant(s)

OHKUBO ET AL.

Examiner

Raymond S Dean

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 - 20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 4 - 8, 11 - 16, 18, and 19 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 9, 10, 17, and 20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10. 6) ☐ Other: .

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 4, 8, and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Bousquet et al. (US 6,650,906 B1).

Regarding Claim 1, Bousquet teaches a method of controlling a transmission power of a multicast signal that is transmitted from a base station to a plurality of mobile stations through a radio link (Column 2 lines 16 – 20, Column 2 lines 66 – 67, Column 3 lines 1 – 3), comprising the steps of: measuring a value of a received signal quality parameter of a multicast signal received at the mobile stations (Column 3 lines 7 – 20, Column 3 lines 28 – 30); transmitting a parameter signal, indicating the received signal quality parameter value, from the mobile stations to the base station through the radio link (Column 3 lines 30 – 36); receiving the parameter signals from the mobile stations at the base station through the radio link; determining a power control value of each of the mobile stations based on the received signal quality parameter values of the

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parameter signals received at the base station; and controlling the transmission power of the multicast signal, sent to each of the mobile stations, based on the determined power control value (Column 3 lines 36 – 53, the reference signals are the received signal quality parameter values, which the base station uses to determine how to adjust the transmit power, thus there is an inherent determination of a power control value).

Regarding Claim 4, Bousquet teaches all of the claimed limitations recited in Claim 1. Bousquet further teaches a reception power of the received multicast signal that is measured as being the value of the received signal quality parameter in said measuring step (Column 3 lines 28 – 30).

Regarding Claim 8, Bousquet teaches a base station which controls a transmission power of a multicast signal that is transmitted to a plurality of mobile stations through a radio link (Column 2 lines 16 – 20, Column 2 lines 66 – 67, Column 3 lines 1 – 3), comprising: a receiver receiving parameter signals from the mobile stations through the radio link, each parameter signal indicating a value of a received signal quality parameter of the multicast signal received at one of the mobile station; a determination unit determining a power control value of each of the mobile stations based on the received signal quality parameter values of the parameter signals received by the receiver; and a transmission power controller controlling the transmission power of the multicast signal, sent to each of the mobile stations, based on the determined power control value (Column 3 lines 36 – 53, the reference signals are the received signal quality parameter values, which the base station uses to determine how to adjust

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the transmit power, thus there is an inherent determination unit determining a power control value).

Regarding Claim 11, Bousquet teaches all of the claimed limitations recited in Claim 8. Bousquet further teaches mobile stations that measure a reception power of the received multicast signal as being the value of the received signal quality parameter (Column 3 lines 28 – 30).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 5, 6, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bousquet et al. (US 6,650,906 B1) in view of Hamalainen et al. (US 6,289,217 B1).

Regarding Claim 5 and 6, Bousquet teaches all of the claimed limitations recited in Claim 1.

Regarding Claim 5, Bousquet further teaches a multicast signal (Column 2 lines 16 – 20). Bousquet does not specifically teach a carrier- to-co channel interference C/I ratio of the received multicast signal that is measured, and a difference between the

measured C/I ratio and a reference C/I ratio is measured as being the value of the received signal quality parameter.

Hamalainen teaches a carrier- to-co channel interference C/I ratio of a received signal that is measured, and a difference between the measured C/I ratio and a reference C/I ratio is measured as being the value of the received signal quality parameter (Column 4 lines 65 – 67, Column 5 lines 1 – 5, Column 10 lines 15 – 24, Column 14 lines 47 – 48, the measured C/I ratio is compared to a threshold or reference C/I ratio to determine if there is a difference from said reference C/I ratio, the radio link is adjusted based on said difference).

Bousquet and Hamalainen both teach wireless systems that adjust or change a characteristic of a radio link based on the received signal quality thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the C/I ratio taught in Hamalainen in the system of Bousquet as an alternative means for determining said received signal quality.

Regarding Claim 6, Bousquet does not specifically teach one of a bit error ratio, a packet error ratio and a slot error ratio of the received multicast signal that is measured as being the value of the received signal quality parameter in said measuring step.

Hamalainen teaches one of a bit error ratio, a packet error ratio and a slot error ratio of the received signal is measured as being the value of the received signal quality parameter in said measuring step (Column 14 lines 47 – 48).

Bousquet and Hamalainen both teach wireless systems that adjust or change a characteristic of a radio link based on the received signal quality thus it would have

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been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the bit error ratio taught in Hamalainen in the system of Bousquet as an alternative means for determining said received signal quality.

Regarding Claim 12 and 13, Bousquet teaches all of the claimed limitations recited in Claim 8.

Regarding Claim 12, Bousquet does not specifically teach each of the mobile stations measuring a carrier-to-co channel interference C/I ratio of the received multicast signal, and measuring a difference between the measured C/I ratio and a reference C/I ratio as being the value of the received signal quality parameter.

Hamalainen teaches a mobile station measuring a carrier-to-co channel interference C/I ratio of the received signal, and measuring a difference between the measured C/I ratio and a reference C/I ratio as being the value of the received signal quality parameter (Figure 6, Column 4 lines 65 – 67, Column 5 lines 1 – 5, Column 10 lines 15 – 24, Column 14 lines 47 – 48, the measured C/I ratio is compared to a threshold or reference C/I ratio to determine if there is a difference from said reference C/I ratio, the radio link is adjusted based on said difference).

Bousquet and Hamalainen both teach wireless systems that adjust or change a characteristic of a radio link based on the received signal quality thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the C/I ratio taught in Hamalainen in the system of Bousquet as an alternative means for determining said received signal quality.

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Regarding Claim 13, Bousquet does not specifically teach each of the mobile stations measuring one of a bit error ratio, a packet error ratio and a slot error ratio of the received multicast signal as being the value of the received signal quality parameter.

Hamalainen teaches a mobile station measuring one of a bit error ratio, a packet error ratio and a slot error ratio of the received multicast signal as being the value of the received signal quality parameter (Figure 6, Column 14 lines 47 – 48).

Bousquet and Hamalainen both teach wireless systems that adjust or change a characteristic of a radio link based on the received signal quality thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the bit error ratio taught in Hamalainen in the system of Bousquet as an alternative means for determining said received signal quality.

4. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bousquet et al. (US 6,650,906 B1) in view of Kaku (6,072,998).

Regarding Claim 7, Bousquet teaches all of the claimed limitations recited in Claim 1.

Bousquet does not specifically teach one of an error correction-bit number and a maximum likelihood value, obtained by decoding of the received multicast signal, is measured as being the value of the received signal quality parameter in said measuring step.



Kaku teaches one of an error correction-bit number and a maximum likelihood value, obtained by decoding of the received signal, is measured as being the value of the received signal quality parameter in said measuring step (Column 5 lines 14 – 38).

Bousquet and Kaku both teach mobile receivers that measure the quality of a received signal thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the maximum likelihood value taught in Kaku in the mobile units of Bousquet as an alternative means for determining said received signal quality.

Regarding Claim 14, Bousquet teaches all of the claimed limitations recited in Claim 8.

Bousquet does not specifically teach each of the mobile stations measuring one of an error-correction-bit number and a maximum likelihood value, obtained by decoding of the received multicast signal, as being the value of the received signal quality parameter.

Kaku teaches a mobile station measuring one of an error-correction-bit number and a maximum likelihood value, obtained by decoding of the received multicast signal, as being the value of the received signal quality parameter (Column 5 lines 14 – 38).

Bousquet and Kaku both teach mobile receivers that measure the quality of a received signal thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the maximum likelihood value taught in Kaku in the mobile units of Bousquet as an alternative means for determining said received signal quality.

5. Claims 15, 16, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bousquet et al. (US 6,650,906 B1) in view of Hamalainen et al. (US 6,289,217 B1) and in further view of Burt et al. (US 6,253,077 B1).

Regarding Claim 15, Bousquet teaches a method of controlling a transmission power of a multicast signal that is transmitted from a base station to a plurality of mobile stations through a radio link, comprising the steps of: transmitting the multicast signal to the mobile stations through the radio link (Column 2 lines 16 – 20, Column 2 lines 66 – 67, Column 3 lines 1 – 3); receiving a reference signal from each of the mobile stations at the base station through the radio link, wherein each of the mobile stations transmits the reference signal to the base station when there is a change in the quality of a received multicast signal (Column 3 lines 28 – 53); detecting whether at least one of a plurality of reference signals from the mobile stations is received at the base station; and controlling the transmission power of the multicast signal, sent to each of the mobile stations, based on the reference signal detection result (Column 3 lines 28 – 53, in order for the base station to adjust the transmit power it must detect the presence of a return reference signal from the mobile unit thus this is an inherent characteristic).

Bousquet does not specifically teach an ARQ signal.

Hamalainen teaches an ARQ signal (Column 9 lines 29 – 35).

Bousquet and Hamalainen both teach wireless systems that adjust or change a characteristic of a radio link based on the received signal quality thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to

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make a design preference and use the ARQ method taught in Hamalainen in the system of Bousquet as an alternative means for determining said received signal quality.

Bousquet in view of Hamalainen does not specifically teach outputting a power control signal.

Burt teaches outputting a power control signal (Column 2 lines 1 – 5).

Bousquet in view of Hamalainen and Burt teach wireless systems that adjust the transmit power level of the base station based on the received signal quality thus it would have been obvious to one of ordinary skill in the art at the time the invention was made use the outputting of a power control signal taught in Burt in the base station of Bousquet such that the transmit power of said base station can be properly adjusted to accommodate the receiving mobile units.

Regarding Claim 16, Bousquet in view of Hamalainen and in further view of Burt teaches all of the claimed limitations recited in Claim 15. Bousquet further teaches increasing the transmission power of the multicast signal and decreasing the transmission power of the multicast signal (Column 3 lines 43 – 53, the transmission power can be adjusted to a higher power level or lower power level depending on the signal quality requirements of the mobile units, said signal quality requirements are expressed in the return reference signal).

Regarding Claim 18, Bousquet teaches a base station which controls a transmission power of a multicast signal that is transmitted to a plurality of mobile stations through a radio link, comprising: a transmitter transmitting the multicast signal

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to the mobile stations through the radio link (Column 2 lines 16 – 20, Column 2 lines 66 – 67, Column 3 lines 1 – 3); a receiver receiving a reference signal from each of the mobile stations through the radio link, wherein each of the mobile stations transmits the reference signal to the base station when there is a change in the quality of a received multicast signal (Column 3 lines 28 – 53); a transmission power controller controlling the transmission power of the multicast signal, sent to each of the mobile stations, based on the reference signal detection result (Column 3 lines 28 – 53, in order for the base station to adjust the transmit power it must detect the presence of a return reference signal from the mobile unit thus this is an inherent characteristic).

Bousquet does not specifically teach a signal counter unit detecting whether at least one of a plurality of ARQ signals from the mobile stations is received by the receiver.

Hamalainen teaches a signal counter unit detecting whether at least one of a plurality of ARQ signals from the mobile stations is received by the receiver (Column 9 lines 29 – 35, in order for the base station to retransmit it must detect the presence of an ARQ signal thus there is an inherent signal counter).

Bousquet and Hamalainen both teach wireless systems that adjust or change a characteristic of a radio link based on the received signal quality thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to make a design preference and use the signal counter with the ARQ method taught in Hamalainen in the system of Bousquet as an alternative means for determining said received signal quality.

Bousquet in view of Hamalainen does not specifically teach outputting a power control signal.

Burt teaches outputting a power control signal (Column 2 lines 1 – 5).

Bousquet in view of Hamalainen and Burt teach wireless systems that adjust the transmit power level of the base station based on the received signal quality thus it would have been obvious to one of ordinary skill in the art at the time the invention was made use the outputting of a power control signal taught in Burt in the base station of Bousquet such that the transmit power of said base station can be properly adjusted to accommodate the receiving mobile units.

Regarding Claim 19, Bousquet in view of Hamalainen and in further view of Burt teaches all of the claimed limitations recited in Claim 18. Bousquet further teaches increasing the transmission power of the multicast signal and decreasing the transmission power of the multicast signal (Column 3 lines 43 – 53, the transmission power can be adjusted to a higher power level or lower power level depending on the signal quality requirements of the mobile units, said signal quality requirements are expressed in the return reference signal).

#### ***Allowable Subject Matter***

6. Claims 2, 3, 9, 10, 17, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: Regarding Claims 2 and 9, Bousquet teaches an inherent determination of a power control value based on the received signal quality parameter values of the parameter signals received at the base station but the prior art of record fails to specifically show a minimum value of the received signal quality parameter values of the received parameter signals as said power control value.

Regarding Claims 3 and 10, Bousquet teaches an inherent determination of a power control value based on the received signal quality parameter values of the parameter signals received at the base station but the prior art of record fails to specifically show received signal quality parameter values that are rearranged into a sequence of the parameter values in a predetermined order, and one of the parameter values in the rearranged sequence that corresponds to a predetermined ratio of the entire mobile stations is determined as being the power control value.

Regarding Claims 17 and 20, Bousquet in view of Hamalainen teaches a wireless system with a base station that adjusts its transmit power when it detects an ARQ signal but the prior art of record fails to specifically show a detecting step wherein it is detected whether a ratio of the number of the received ARQ signals to the number of the mobile stations exceeds a predetermined ratio, and, in said controlling step, the transmission power of the multicast signal is increased when the ratio of the ARQ-signal number exceeds the predetermined ratio, and the transmission power of the multicast signal is decreased when the ratio of the ARQ-signal number does not exceed the predetermined ratio.

***Conclusion***

7. Any inquiry concerning this communication should be directed to Raymond S. Dean at telephone number (703) 305-8998.

If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung, can be reached at (703) 308-7745. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

Or faxed to:

(703) 872-9314 (for Technology center 2600 only)

Hand – delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377

A handwritten signature in black ink, appearing to read "Raymond S. Dean". The signature is written in a cursive, flowing style with a long horizontal line extending from the end.